Problem Statement-2

```java
package arrays;
class small{
        int smalles(int a[] , int l , int r , int k) {
                if(k>0 && k<=r-l+1) {
                        int pos=rpatition(a,l,r);
                        if(pos-l==k-1) return a[pos];
                        if(pos-l>k-1)
                                return smalles(a,l,pos-1,k);
                                return smalles(a,pos+1,r,k-pos+l-1);
                }
                return Integer.MAX_VALUE;
        }
   void swap(int arr[], int i, int j)
   {
        int temp = arr[i];
        arr[i] = arr[j];
        arr[j] = temp;
   }
int partition(int a[],int l,int r) {
        int x=a[r],i=l;
        for(int j=l;j<=r-1;j++) {
                if(a[j]<=x) {
                        swap(a,i,j);
                        i++;
                }
        }
        swap(a,i,r);
        return i;
}
int rpatition(int a[],int l ,int r) {
        int n=r-l+1;
        int pivot=(int)(Math.random())*(n-1);
        swap(a,l+pivot,r);
        return partition(a,l,r);
}
}
}
public class Orderstatics {
        public static void main(String[] args) {
                // TODO Auto-generated method stub
                small s=new small();
                int a[]= {12,3,5,7,4,19,26};
                int n=a.length , k=4;
                System.out.println("4th Smallest element is:"+s.smalles(a, 0, n-1,
k));
        }
}
```

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```java
  1 package arrays;
  2
  3
  4 class small{
  5⊖    int smalles(int a[] , int l , int r , int k) {
  6          if(k>0 && k<=r-l+1) {
  7              int pos=rpatition(a,l,r);
  8              if(pos-l==k-1) return a[pos];
  9              if(pos-l>k-1)
 10                  return smalles(a,l,pos-1,k);
 11                  return smalles(a,pos+1,r,k-pos+l-1);
 12          }
 13          return Integer.MAX_VALUE;
 14      }
 15⊖    void swap(int arr[], int i, int j)
 16      {
 17          int temp = arr[i];
 18          arr[i] = arr[j];
 19          arr[j] = temp;
 20      }
 21⊖int partition(int a[],int l,int r) {
 22      int x=a[r],i=l;
 23      for(int j=l;j<=r-1;j++) {
 24          if(a[j]<=x) {
 25              swap(a,i,j);
 26              i++;
 27          }
```

Problems @ Javadoc Declaration Console ×

<terminated> Orderstatics [Java Application] C:\Users\Swaroop\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_

4th Smallest element is:7